AP Biology Vocabulary List by Chapter

Chapter 1
Biosphere
Ecosystem
Biological community
Population
Organism
Organ system
Organ
Tissue
Cell
Organelle
Molecule
Producer
Consumer
DNA
Genes
Genome
Emergent properties
Negative feedback regulation
Positive feedback regulation
Taxonomy
Natural selection
Science Inquiry
Observation
Data
Hypothesis
Controlled experiment

Chapter 2
Matter
Element
Compound
Trace elements
Atom
Neutron
Protons
Electron
Atomic nucleus
Atomic number
Mass number
Atomic mass
Isotopes
Radioactive isotope
Energy
Potential energy
Kinetic energy
Energy levels
Valence electrons
Electron configuration
Chemical bonds
Covalent bonds
Ionic bonds
Hydrogen bonds
Van der Waals interactions
Molecule
Single bond
Double bond
Triple bond
Structural formula
Molecular formula
Electronegativity
Nonpolar covalent bond
Polar covalent bond
Anion
Cation
Ionic compound
Chemical reaction
Reactants
Products
Chemical equilibrium

Chapter 3
Cohesion
Adhesion
Surface tension
Heat
Temperature
Specific heat
Heat of vaporization
Evaporative cooling
Solution
Solvent
Solute
Aqueous solution
Hydrophilic
Hydrophobic
Molecular mass
Mole
Molar mass
Molarity
Hydroxide ion
Hydrogen ion
Acid
Base
pH
pH scale
Buffers

Chapter 4
Organic chemistry
Tetravalence
Hydrocarbons
Isomers
Structural isomer
Geometric isomer
Functional group
Hydroxyl group
Carbonyl group
Carboxyl group
Amino group
Sulfhydryl group
Phosphate group
ATP

Chapter 5
Macromolecule
Polymer
Monomer
Dehydration reaction
Hydrolysis
Carbohydrates
Monosaccharides
Disaccharides
Polysaccharides
Glycosidic linkage
Glycogen
Cellulose
Chitin
Lipids
Fatty acid
Glycerol
Triacylglycerol
Saturated fatty acid
Unsaturated fatty acid
Phospholipids
Steroids
Cholesterol
Enzymes
Catalysts
Polypeptides
Protein
Amino acids
R-group
Peptide bond
Denaturation
Nucleic acids
Nucleotides
Pyrimidines
Purines

Chapter 6
Bound ribosomes
Capsule
Cell fractionation
Cell motility
Cell wall
Central vacuole
Centrioles
Centrosome
Chlorophyll
Chloroplast
Chromatin
Chromosomes
Cilia
Cytoplasm
Cytoskeleton
Electron microscope
Endoplasmic reticulum
Eukaryotic cell
Extracellular matrix (ECM)
Flagella
Food vacuoles
Free ribosomes
Gap junctions
Golgi apparatus
Grana
Light/optical microscope
Lysosome
Microtubules/filaments
Mitochondria
Mitochondrial cristae
Mitochondrial matrix
Motor proteins
Nuclear envelope
Nucleolus
Nucleus
Peroxisome
Phagocytosis
Pili
Plasma membrane
Prokaryotic cell
Ribosomes
Rough E.R.
Scanning electron microscope (SEM)
Smooth E.R.
Stroma
Thylakoids
Transmission electron microscope (TEM)
Transport vesicles

Chapter 7
Selective permeability
Amphipathic molecule
Fluid mosaic model
Extracellular matrix
Integral proteins
Peripheral proteins
Transmembrane proteins
Transport proteins
Channel proteins
Carrier proteins
Aquaporins
Diffusion
Concentration gradient
Passive transport
Osmosis
Isotonic
Hypertonic
Hypotonic
Lyse
Osmoregulation
Turgid
Flaccid
Plasmolysis
Facilitated diffusion
Ion channels
Voltage gated channels
Chemically gated channels
Active transport
Sodium-potassium pump
Membrane potential
Electrochemical gradient
Proton pump
Exocytosis
Endocytosis
Phagocytosis
Pinocytosis

Chapter 8
Metabolism
Catabolic pathway
Anabolic pathway
Kinetic energy
Potential energy
Chemical energy
First law of thermodynamics
Second law of thermodynamics
Entropy
Gibbs free energy
Enthalpy
Kelvin
Exergonic reaction
Endergonic reaction
Energy coupling
Adenosine triphosphate
Phosphorylated
Activation energy
Enzyme-substrate complex
Active site
Induced fit
Coenzyme
Competitive inhibitor
Noncompetitive inhibitor
Allosteric regulation
Allosteric inhibition
Feedback inhibition

Chapter 9

Fermentation

Cellular respiration

NAD+

Electron transport chain

Glycolysis

Krebs cycle

Oxidative phosphorylation

Substrate-level phosphorylation

Acetyl CoA

Cytochrome

ATP synthase

Proton motive force

Aerobic

Anaerobic

Alcohol fermentation

Lactic acid fermentation

Chapter 10

Photosynthesis
Autotroph

Heterotroph

Mesophyll

Stomata

Light reaction

Calvin cycle

NADP**+**

NADPH

Photophosphorylation

Carbon fixation

Electromagnetic spectrum

Photons

Chlorophyll a

Chlorophyll b

Carotenoids

Photosystem

Primary electron acceptor

Photosystem I & photosystem II

Noncyclic electron flow

Cyclic electron flow

Rubisco

C**3** plants

Photorespiration

C**4** plants

CAM plants

Succulent

Chapter 11

Signal transduction pathway

Local regulators

Growth factors

Paracrine signaling

Synaptic signaling

Hormonal signaling

Hormones

Ethylene

Insulin

Transcription factors

G-protein linked receptors

GTP

GTPase

Kinase

Ligand gated ion channel receptors

Protein kinase

Protein phosphatases

Second messengers

Cyclic AMP (cAMP)

Adenylyl cyclase

Inositol triphosphate (IP**3**)

Diacylglycerol (DAG)

Scaffolding proteins

Chapter 12

Cell division

Cell cycle

Genome

Chromosomes

Somatic cells

Gametes

Chromatin

Sister chromatids

Centromere

Mitosis

Cytokinesis

Meiosis

Interphase

G**1** phase

S phase

G**2** phase

Prophase

Metaphase

Anaphase

Telophase

Centrosome

Cleavage furrow

Cell plate

Binary fission

Cell cycle control system

Checkpoint

G**0** phase

Cyclin

Cyclin-dependent kinases (Cdks)

Apoptosis

Density-dependent inhibition

Anchorage dependence

Cancer cells

Benign tumor

Malignant tumor

Metastasis

Chapter 13

Genetic variation

Genes

Asexual reproduction

Budding

Clone

Sexual reproduction

Karyotype

Homologous chromosomes

Sex chromosomes

Autosomes

Diploid cell (2n)

Haploid cell (n)

Fertilization

Zygote

Alternation of generations

Sporophyte

Spores

Gametophyte

Meiosis I

Meiosis II

Crossing over

Independent assortment

Recombinant chromosomes

Recombination frequency

Map units

Chapter 14

Gregor Mendel

Trait

Cross pollination

True breeding

Hybridization

P generation

F**1** generation

F**2** generation

Gene

Alleles

Locus

Dominant allele

Recessive allele

Law of segregation

Punnett square

Homozygous

Heterozygous

Phenotype

Genotype

Testcross

Monohybrids

Monohybrid cross

Dihybrids

Dihybrid cross

Law of independent assortment

Multiplication rule

Addition rule

Complete dominance

Codominance

Incomplete dominance

Multiple alleles

Polygenic inheritance

Pedigree

Carriers

Sickle cell disease

Chapter 15

Chromosomal theory of inheritance

Wild type

Mutant phenotype

Linked genes

Genetic recombination

Linkage map

Parental types

Sex-linked gene

Hemophilia

Nondisjunction

Aneuploidy

Trisomy

Monosomy

Deletion

Duplication

Inversion

Translocation

Chapter 16

Watson & Crick

Wilkins & Franklin

DNA structure

Hershey & Chase Experiments

Avery, McCarty & MacLeod Experiments

Double helix

Purines

Pyrimidines

Complementary strands

Semiconservative model

Origins of replication

Replication fork

Antiparallel

5′ end of DNA strand

3′ end of DNA strand

5′🡪3′ direction

DNA polymerase III

Leading strand

Lagging strand

Okazaki fragments

DNA ligase

Ligates

Primer

Primase

DNA polymerase I

Helicase

Topoisomerase

Chapter 17

Gene expression

Transcription

Messenger RNA (mRNA)

Translation

RNA processing

Template strand

Codons

Nontemplate strand

Initiation “start” codon

Elongation

Termination “stop” codons

Reading frame

RNA polymerase

Promoter

Terminator

Transcription unit

Transcription factors

Transcription initiation complex

TATA box

GTP cap

Poly-A tail

RNA splicing

Introns

Exons

Spliceosome

Transfer RNA (tRNA)

Anticodon

Aminoacyl-tRNA synthetase

Ribosomal RNA (rRNA)

mRNA binding site

P site

A site

E site

Mutations

Point mutations

Base pair substitutions

Silent mutations

Missense mutations

Nonsense mutations

Insertions

Deletions

Frameshift mutations

Chapter 18

Histones

Histone acetylation

DNA methylation

Heterochromatin

Euchromatin

Enhancers

Activator

Repressors

Corepressor

Transponsons

Operator

Operon

Regulatory gene

Repressible operon

Inducible operon

*lac* operon

Inducer

Activator

Cell differentiation

Cytoplasmic determinants

Differential gene expression

Genomic imprinting

Determination

Epigenetic inheritance

Feedback inhibition

Proteasomes

Oncogenes

Micro-RNA (miRNA)

Chapter 19

Viral genomes

Capsid

Viral envelopes

Bacteriophages

Host range

Lytic cycle

Virulent phage

Restriction enzymes

Lysogenic cycle

Retroviruses

Reverse transcriptase

HIV

AIDS

Vaccines

Antibiotics

Binary fission

Transformation

Transduction

Conjugation

Sex pilus

Mating bridge

Plasmid

Episome

Chapter 20

Recombinant DNA

Genetic engineering

Biotechnology

Gene cloning

Restriction site

Restriction fragments

Sticky ends

Cloning vector

DNA denaturation

Polymerase chain reaction (PCR)

Gel electrophoresis

Southern blotting

Restriction length polymorphisms (RFLP’s)

Human Genome Project

DNA microarray assays

Gene therapy

DNA fingerprint

Genetically modified organisms (GMO’s)

Chapter 21

Morphogenesis

Apical meristems

Blastula

Gastrula

Totipotent cells

Stem cells

Embryonic stem cells

Pluripotent cells

Induction

Embryonic lethals

Homeotic genes

Cell lineage

Carpels

Stamens

Petals

Sepals

Chimeras

Homeobox

Hox genes

Chapter 22

Charles Darwin

Natural Selection

Evolutionary adaptation

Evolution

Carolus Linnaeus

Taxonomy

Fossils

Paleontology

Jean-Baptiste de Lamarck

Theory of use & disuse

Theory of inheritance of acquired characteristics

H.M.S. Beagle

Alfred Russell Wallace

Descent with modification

Artificial Selection

Homology

Homologous structures

Vestigial organs

Molecular homologies

Biogeography

Chapter 23

Microevolution

Population genetics

Gene pool

Hardy-Weinberg equilibrium

5 Conditions needed for H-W equilibrium

Genetic drift

Bottleneck effect

Founder effect

Gene flow

Geographic variation

Fitness

Directional selection

Disruptive selection

Stabilizing selection

Diploidy

Heterozygote advantage

Sexual selection

Chapter 24

Speciation

Reproductive isolation

Prezygotic barriers

Postzygotic barriers

Habitat isolation

Temporal isolation

Behavioral isolation

Mechanical isolation

Gametic isolation

Allopatric speciation

Sympatric speciation

Chapter 25

Phylogeny

Fossil record

Fossil types

Morphological homology

Molecular homology

Analogy (analogous structures)

Divergent evolution

Convergent evolution

Taxonomy

Genus (genera)

Family

Order

Class

Phylum

Kingdom

Domain

Phylogenetic trees

Cladogram

Chapter 51-54

Proximate causation

Ultimate causation

Fixed Action Pattern

Kinesis

Taxis

Innate behavior

Learned behavior

Habituation

Classical conditioning

Operant conditioning

Altruism

Abiotic

Biotic

Symbiosis

Mutualism

Commensalism